

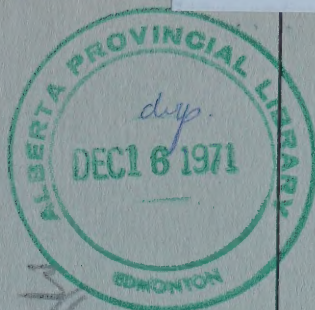
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TWENTY-SECOND ANNUAL REPORT

OF THE

2 Department of Mines and Minerals

OF THE

PROVINCE OF ALBERTA

FOR THE

Fiscal Year Ended March 31st
4 1971

EDMONTON:
PRINTED BY L. S. WALL, Queen's Printer
1971

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PRINTED BY L. S. WALL, Queen's Printer

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To the Honourable J. W. Grant MacEwan,

Lieutenant Governor of the Province of Alberta

Sir:

I have the honour to submit the Report of the Department of Mines and Minerals for the fiscal year ended March 31st, 1971.

I have the honour to be, Sir,

Your obedient servant,

A. RUSSELL PATRICK,

Minister of Mines and Minerals

Edmonton, July 23, 1971.

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CHIEF OFFICERS
DEPARTMENT OF MINES AND MINERALS
MARCH 31st, 1971

Hon. A. Russell Patrick*Minister*
H. H. Somerville*Deputy Minister*
Vacant*Solicitor*
J. J. Heron*Statistician*
B. P. P. Muir*Accountant*
T. H. Gladders*Personnel Officer*

MINERALS DIVISION

Vacant*Director*
M. J. Day*Assistant Director*
F. Holubowich*Supervisor of Revenue*
W. H. Roy*Supervisor of Reservations,
Permits and Licences*
B. R. Nimchuk*Supervisor of Leases and Mining
Recorder, Edmonton District*
D. C. MacMillan*Mining Recorder, Calgary District*

MINERAL TAX DIVISION

I. M. Harrington*Superintendent*
N. B. Adam*Assistant Superintendent*
W. McGechie*Chief Assessor*

MINES DIVISION

P. Melson*Director*

PIPE LINE DIVISION

A. L. Berry*Superintendent*
G. W. B. Bullymore*Assistant Superintendent*

TECHNICAL DIVISION

J. M. Novak*Superintendent*
E. G. Staniforth*Assistant Superintendent*
E. D. Barnard*Supervisor of Records*

TWENTY-SECOND ANNUAL REPORT

OF THE

Department of Mines and Minerals

HONOURABLE A. RUSSELL PATRICK,
Minister of Mines and Minerals,
Edmonton, Alberta

Sir:

I have the honour to present the Annual Report of the Department of Mines and Minerals for the fiscal year ended March 31, 1971.

Production dominated the activities of the oil and gas industry during 1970, and income levels exceeded one billion dollars for the third consecutive year.

Crude oil production increased over 46 million barrels, or 17 per cent, to 326.3 million barrels and marketed natural gas rose 16 per cent from 1.27 trillion cubic feet to 1.48 trillion cubic feet. Pentanes plus production expanded by 5.5 million barrels or 15 per cent to 41.9 million barrels, propane was up 3.4 million barrels or 21 per cent to 20.1 million barrels and butanes added 2.1 million barrels or 20 per cent to 12.5 million barrels. Output of sulphur advanced 14 per cent from 3.7 million long tons to 4.2 million long tons.

Exploration activities decreased slightly in 1970, due mainly to reduced expenditures by industry for Crown reserves. Exploratory footage declined slightly from 4.5 to 4.1 million feet. Total footage drilled on exploration and development was down 0.9 million feet to 7.7 million feet and was concentrated in the southeastern part of the Province on shallow gas and heavy crude oil plays.

Alberta's proven crude oil reserves dropped slightly to 7.6 billion barrels at December 31, 1970. However, reserves of all other hydrocarbons and sulphur increased. At year-end natural gas reserves stood at 45.4 trillion cubic feet, natural gas liquids totalled 2.2 billion barrels and sulphur was 186 million long tons.

Natural gas processing construction in 1970 was at its highest level since 1961. Fourteen new plants, costing as estimated \$70 million, were placed on stream and raised the number in operation to 127. These plants processed 85 per cent of Alberta's marketed gas of 1.48 trillion cubic feet. Of this supply, 241 billion cubic feet were sold in Alberta, exports to the United States were 623 billion cubic feet and the remainder was consumed in other Provinces in Canada.

Four additional communities received natural gas services during the year raising the total to 365. All of the cities, 95 per cent of the towns and over 57 per cent of the villages in Alberta are now served with natural gas. The new town of Grande Cache was among the towns serviced in 1970. At year-end almost 75 per cent of Alberta's population was benefiting from the use of natural gas.

Among major pipe line construction during the 1970-1971 fiscal year was the looping, with 42-inch diameter line, of a portion of the existing system of Alberta Gas Trunk Line Company. Pembina Pipe Line Ltd. completed a 26-mile 16-inch diameter loop to increase crude oil capacity from the Pembina field to Edmonton to 185,000 barrels a day. Gulf Oil Canada Ltd. constructed 193 miles of 10-inch diameter products line from Edmonton to Calgary to tie in with its new 80,000 barrel a day refinery east of Edmonton.

Growth of the coal industry in 1970 continued in both production and exploration. Coal mined increased 53% from 4.4 in 1969 to 6.8 million short tons while the value was up from \$13.5 to \$26.7 million. Exports to Japan were 2.4 million tons and 6 thousand tons were exported to the United States. Some 3.3 million tons were consumed in Alberta for the generation of electric power for use within Alberta, 0.3 million tons were consumed for other purposes in Alberta and the remainder of 0.8 million tons was consumed in the provinces of British Columbia, Saskatchewan, Manitoba and Ontario.

During the fiscal year 1,746 Reclamation Certificates and 71 Orders to perform work were issued under The Surface Reclamation Act. Since the Act came into force on June 1, 1963, a total of 13,409 Certificates and 1,226 Orders have been issued.

A separate report regarding the operation of coal mines and quarries may be obtained from the office of the Mines Division in the Agriculture Building, 9718 - 107 Street, Edmonton 6, Alberta.

Detailed reports of the other Divisions follow.

H. H. Somerville,
Deputy Minister

July 19, 1971

MINERALS DIVISION

Report of the Assistant Director of Minerals

MICHAEL J. DAY

In the twenty-second year of administration by the Department of Mines and Minerals, mineral exploration and development continued at a slightly reduced rate.

Footage drilled for petroleum and natural gas during 1970 was 7,687,695 feet. This was a decrease of 945,259 feet from the previous year. The production of crude oil increased to 326,321,518 barrels, an increase of 46,586,099 barrels from 1969. The number of wells capable of producing increased to 13,971 and were capable of maintaining an average daily rate of production of 1,650,000 barrels at December 31, 1970 under good production practice. Because of field processing and main pipe line limitations, the average daily oil produced during the year was only 894,032 barrels, an increase of 16.7 per cent from the previous year. There were 1,925 licences issued to drill for oil or gas during 1970 compared with 1,866 licences during the previous year.

The production and value of Alberta's chief minerals for 1970 were: conventional crude oil, 326,321,518 barrels valued at \$845,-576,657; pentanes plus, 41,894,798 barrels valued at \$112,332,644; natural gas marketed, 1,478,124 MMcf valued at \$147,812,400; propane, 20,057,951 barrels valued at \$26,944,285; butanes, 12,543,686 barrels valued at \$14,934,842; sulphur, 4,181,636 tons valued at \$37,349,854; coal, 6,783,911 tons valued at \$26,710,488; and salt, 73,727 tons valued at \$2,276,912.40.

Mineral rights, solid, liquid and gaseous, the property of the Crown in right of Alberta, are not sold, but are disposed of by lease, reservation, licence, permit or other agreement for limited periods of time. Revenue is obtained from fees, rentals, bonuses, royalties, sales of leases and other miscellaneous charges. During the fiscal year these sources provided a revenue of \$232,867,929.14, a decrease of \$23,553,905.41 from the previous year. Sales of leases and reservations in Crown Reserves were held on four occasions in the fiscal year and the revenue from this source decreased by 25 million dollars to 16.8 million dollars.

The Province is divided into two mining districts; the Edmonton district comprises that portion of the Province lying to the north of the north boundary of Township 42 and the balance of the Province lying to the south is contained in the Calgary district.

During the year 3,959 applications for mineral rights were filed at the offices of the Mining Recorders in Edmonton and Calgary and at the office of the Department in Edmonton. Many inquiries were made, by personal application and by correspondence, as to the availability of mineral rights, most of them for petroleum and natural gas leases and reservations.

A tabulation of numbers of leases together with statements of business transacted follows:

NUMBERS OF MINERAL LEASES

Type of Lease	Active at April 1, 1970	Issued	Reinstated	Divided	Cancelled	Renewed	Active at March 31, 1971
Petroleum and Natural Gas	33,912	3,303	108	284	4,462	—	33,145
Natural Gas	1,268	33	—	13	26	—	1,288
Petroleum	18	—	—	—	—	—	18
Coal	560	198	1	2	10	40	711
Road Allowance Coal	88	1	—	—	1	—	88
Quarrying	92	4	3	—	8	—	91
Salt	2	—	—	—	—	—	2
Bituminous Sands	83	1	—	—	—	—	84
Oil Sands	43	11	—	—	—	—	54
Iron	5	—	—	—	—	—	5
Sodium Sulphate	2	—	—	—	—	—	2
Miscellaneous	8	2	—	—	—	—	10
TOTAL	36,081	3,553	112	299	4,507	40	35,498

ACREAGE COMPRISED IN ABOVE LEASES

Type of Lease	Active at April 1, 1970	Issued	Reinstated	Cancelled	Renewed	Active at March 31, 1971
Petroleum and Natural Gas	42,541,057	5,355,929	158,108	6,440,792	—	41,614,302
Natural Gas	4,648,184	122,773	—	92,306	—	4,678,651
Petroleum	55,323	—	—	—	—	55,323
Coal	410,899	229,247	1,322	7,838	13,070	620,560
Quarrying	18,933	366	160	420	—	19,039
Salt	1,204	—	—	—	—	1,204
Bituminous Sands	2,658,663	36,382	—	—	—	2,695,045
Oil Sands	1,297,941	176,521	—	1,296	—	1,473,166
Iron	40,057	—	—	—	—	40,057
Sodium Sulphate	2,136	21	—	—	—	2,157
Miscellaneous	893	468	—	—	—	1,361
TOTAL	51,675,290	5,921,707	159,590	6,542,652	13,070	51,200,865

STATEMENT OF BUSINESS TRANSACTED, 1970-1971

PETROLEUM AND NATURAL GAS

	Number	Acres
Leases issued	3,303	5,355,929
Leases cancelled and relinquished	4,462	6,440,792
Leases reinstated	108	158,108
Reservations issued	114	3,542,335
Reservations terminated	157	6,237,678
Crown reserve drilling reservations issued	52	471,019
Crown reserve drilling reservations terminated	89	806,391
Permits issued	151	2,352,135
Permits terminated	123	1,758,706
Natural gas licences issued	20	264,770
Natural gas licences terminated	13	134,112
Crown reserve natural gas licences issued	21	261,242
Crown reserve natural gas licences terminated	12	144,643
Natural gas leases issued	33	122,773
Natural gas leases cancelled and relinquished	26	92,306
Fees, rentals, penalties and bonuses collected	\$ 58,276,810.35	
Royalties collected	143,718,055.94	
Crown Reserve sales	26,537,046.31	
TOTAL	\$228,531,912.60	

COAL

	Number	Acres
Leases issued	198	229,247
Leases cancelled and relinquished	10	7,838
Road allowance leases—		
Leases issued	1	
Leases cancelled and relinquished	1	
Fees and rentals collected	\$1,257,117.68	
Royalties collected	383,767.45	
TOTAL	\$1,640,885.13	

QUARRYING

	Number	Acres
Leases issued	4	366
Leases cancelled and relinquished	8	420
Fees and rentals collected	\$ 50.00	
Royalties collected	79,748.91	
TOTAL	\$ 79,798.91	

MISCELLANEOUS

	Number
Bituminous sands leases issued	1
Oil sands prospecting permits terminated	2
Oil sands leases issued	11
Quartz mineral exploration permits issued	15
Quartz mineral exploration permits terminated	42
Gold recovery permits issued	1
Special mineral leases issued	2
Quartz—	
Certificates of record issued	54
Certificates of record continued	264
Transfers recorded	5
Roadway sales	3
Geophysical licences issued	138
Permits to operate geophysical equipment issued	17
Permits to operate geophysical equipment renewed	81
Fees, rentals, royalties and miscellaneous charges	\$2,615,332.50

PETROLEUM AND NATURAL GAS

Leases — During the year 3,303 petroleum and natural gas leases were granted comprising 5,355,929 acres and at the close of the fiscal year a total of 33,145 leases were in existence comprising an area of 41,614,302 acres. The Mines and Minerals Act, 1962, which came into force on June 1, 1962 provided that, following an application made under the Act, each petroleum and natural gas lease granted would be for a term of ten years and at the end of the fiscal year there were 19,068 of these leases comprising 24,904,299 acres. Leases formerly granted were for a term of 21 years, and any lease granted from a petroleum and natural gas reservation or Crown reserve drilling reservation before June 1, 1962, also has a term of 21 years. In the same way if a 21 year lease is transferred only as to a portion or is divided, the new lease for the transferred portion or divided portion also carried the 21 year term.

The revenue received from fees amounted to \$32,560.00. The revenue from lease rentals was \$36,686,896.52 and the revenue from bonuses accepted by the Mining Recorders at sales of petroleum and natural gas leases by tender amounted to \$2,014,741.47. The revenue from compensatory royalty on petroleum and natural gas leases amounted to \$12,516.66 and from drilling extension penalties \$478,390.82.

Disposal of Crown Reserves — Petroleum and natural gas rights comprised in Crown reserves may be disposed of by order of the Lieutenant Governor in Council and during the year four Crown reserve sales were held and 464 leases and three Provincial Reserves parcels were purchased. Nine Crown reserve drilling reservation sales were held and 52 drilling reservations were purchased. Four Crown reserve natural gas licence sales were held and 21 Crown reserve natural gas licences were purchased. Particulars of Crown reserve purchases during the year may be obtained from the Department.

Reservations — During the fiscal year 114 reservations were issued comprising an area of 3,542,335 acres and at the close of the year 582 reservations were active comprising an area of 17,385,989 acres.

The revenue from reservation fees amounted to \$30,000.00; for extending reservations amounted to \$3,309,073.05 and the revenue from bonuses accepted by the Director of Minerals at sales of petroleum and natural gas reservations by tender amounted to \$4,575,821.51.

Credit of not in excess of fifty per cent of the approved expenditures incurred in geophysical examination, including drilling on petroleum and natural gas reservations, may apply to the rental for one year of any lease or leases acquired out of reservations and, during the fiscal year under review, rentals of \$3,061,027.08 were satisfied from such expenditures.

Crown Reserve Drilling Reservations — During the fiscal year 52 drilling reservations were issued comprising an area of 471,019 acres and at the close of the year 95 were active comprising an area of 912,985 acres.

The revenue from drilling reservation fees amounted to \$13,000.00, from rentals \$506,637.50 and the revenue from accepted offers at sales of Crown reserve drilling reservations amounted to \$6,872,799.26.

Credit may be granted for expenditures incurred in drilling a well on a drilling reservation and applied in satisfaction of the first year's rental. During the fiscal year, rentals of \$115,620.00 on leases acquired out of the reservations were satisfied by such expenditures.

Petroleum and Natural Gas Permits — During the fiscal year 151 permits covering an area of 2,352,135 acres were issued and at the close of the year 192 permits were active comprising an area of 2,939,397 acres. The revenue from fees was \$1,510.00 and from rentals was \$2,455,945.50 and the revenue from accepted offers at sales of permits was \$6,765,485.78. Credit of not in excess of fifty per cent may be granted for expenditures incurred in drilling a well on a permit and applied in satisfaction of the first year's rental. During the fiscal year, rentals of \$1,099,826.37 on leases acquired out of permits were satisfied by such expenditures.

Natural Gas Licences — During the fiscal year 20 natural gas licences comprising an area of 264,770 acres were issued. The revenue from fees was \$7,750.00 and from rentals was \$32,270.40. Credit may be granted for expenditures incurred in drilling a well on a natural gas licence and applied in satisfaction of the first year's rental. During

the fiscal year, rentals of \$20,870.34 on leases acquired out of the licences were satisfied by such expenditures.

Crown Reserve Natural Gas Licences — During the fiscal year 21 Crown reserve natural gas licences comprising an area of 261,242 acres were issued. At the close of the year 28 licences were active, comprising an area of 331,765 acres. The revenue from fees was \$5,250.00, from rentals \$28,327.70 and the revenue from accepted offers at sales of Crown reserve natural gas licences amounted to \$2,752,150.17. During the fiscal year, rentals of \$2,464.00 on leases acquired out of licences were satisfied by such expenditures.

Natural Gas Leases — During the fiscal year 33 natural gas leases were issued comprising 122,773 acres and at the close of the fiscal year a total of 1,288 leases were in existence comprising an area of 4,678,651 acres. Sixteen of the leases were granted out of natural gas licences or Crown reserve natural gas licences, and permit the recovery of natural gas from one or more zones specified in the lease. Four leases were issued comprising the balance of the spacing units to permit natural gas wells that were capable of commercial production to be operated at full production allowables; seven were issued as the locations were required for unit operations; one was essential for the operation of a gas utility; one was issued in an area where the lessee held gas rights in other zones and two leases were issued to complete gas spacing units.

The annual rental of a natural gas lease is thirty-three and one-third cents an acre. While an adequate market or a market in which the lessee may participate is not available, the annual rental is reduced to ten cents an acre. The revenue from fees was \$400.00 and from lease rentals \$1,287,097.68.

COAL

Production of coal in 1970 increased by 2,357,851 tons to 6,783,911 tons.

In the fiscal year, 198 leases were issued comprising 229,247 acres, being made up of new, renewal and second renewal leases. There are now 711 active leases comprising 620,560 acres. There was 1 road allowance coal mining lease issued and there are now 88 active. The revenue received from fees was \$2,470.00 and from lease rentals \$1,254,647.68.

Crown royalties collected during the fiscal year were \$383,767.45 and the following tonnage of coal subject to royalty was mined.

Coal Leases	3,962,630
Coal Lands and Mineral Sales	444,864
TOTAL	4,407,494

QUARRYING

During the fiscal year 4 quarrying leases comprising a total of 366 acres were issued.

Extraction of 950,710 tons of limestone and shale, 17,073 cubic yards of clay, 58 tons of sandstone and 575,025 tons of rock from Crown leases was reported and at the close of the fiscal year 91 quarrying leases comprising an area of 19,039 acres were active.

BITUMINOUS SANDS

There were 84 leases active at the close of the year.

OIL SANDS

There were 3 permits and 54 leases active at the close of the year.

QUARTZ

During the fiscal year 54 certificates of record were issued and 264 certificates of record were continued for a further year.

There were 15 quartz mineral exploration permits issued during the year.

SODIUM CHLORIDE (common salt)

During the fiscal year the plant near Lindbergh operated and reported extraction of 73,727 tons, a decrease of 1,340 tons from the previous year.

SODIUM SULPHATE

Two sodium sulphate leases comprising 2,157 acres were active at the close of the year. During the fiscal year the plant near Provost operated and reported extraction of 74,523 tons, compared with 17,964 tons the previous year.

IRON

Five iron leases containing an area of 40,057 acres were active at the close of the year.

ROADWAY SALES

During the fiscal year three notifications were issued pursuant to section 24 of The Mines and Minerals Act, 1962. Section 24 provides a means whereby minerals in roadways may be returned to the adjacent owner.

WELL LICENCES

During the fiscal year there were 1,871 licences issued for wells to be drilled for the purpose of obtaining oil or gas, 26 licences were issued for the purpose of drilling test holes, five licences were issued for wells to be drilled for the purpose of injecting gas, air, water or other substance to an underground formation, 39 licences were issued for wells to be drilled for the purpose of obtaining water for injection and for domestic water wells at depths in excess of 500 feet, 12 were issued for geological information, one well licence was issued for the purpose of obtaining salt and one licence was issued for LPG storage. Since January 1, 1968 well licences have been issued by the Oil and Gas Conservation Board.

DRILLING STATISTICS

The drilling and production regulations of petroleum and natural gas wells in the province are administered by the Oil and Gas Conservation Board, 603 - 6th Avenue South West, Calgary 1, Alberta, and particulars as to drilling activity, production and statistical data are included in weekly, monthly and annual reports issued by the Board.

GEOPHYSICAL AND GEOLOGICAL EXPLORATION

During the fiscal year 138 licences and 17 permits were issued and 81 permits were renewed. Alberta Regulation 238/70 filed July 9, 1970 provided that monthly reports must be submitted where geophysical operations are conducted, even though the operations do not entail the drilling of holes. If geophysical operations are not conducted during any month, they shall also be reported.

Provision was also made to exclude geophysical operations on the travelled portion of a highway. In addition, geophysical operations shall not be conducted on the travelled portion of a public road without the prior consent of the appropriate authority.

UNIT OPERATION OF MINERALS

During the fiscal year 27 agreements pursuant to Part VIII of The Mines and Minerals Act, 1962, were entered into for unit operation of petroleum and natural gas properties. These agreements were:

- Willesden Green Cardium Unit No. 8
- Hayter Sparky Unit No. 1
- East Buffalo Lake Leduc Unit
- Lone Pine Creek Gas Unit No. 3
- Pembina Belly River "U" Unit
- East Taber Mannville "D" Unit No. 1
- Gold Creek Wabamun Gas Unit No. 1
- Medicine River Pekisko "B" Pool Unit
- Hunter Valley Unit No. 1
- Clive D-2 Unit No. 1
- Clive D-3A Unit No. 1
- Bellshill Lake Ellerslie Unit
- Lone Pine Creek D-3 Gas Unit No. 1
- Atlee Medicine Hat Sandstone Gas Unit No. 1
- Chauvin South Sparky Unit No. 2
- Oyen Gas Unit No. 3
- Rainbow Keg River I Unit
- Lavoy Gas Unit
- Strachan Leduc D-3 Gas Unit No. 1
- Willesden Green Cardium Unit No. 10
- Matziwin Gas Unit
- Barnwell Provost Viking A Unit
- Rainbow South Keg River E Unit
- Lone Pine Creek Unit No. 4
- Taber North Unit
- Flat Lake Gas Unit
- Alexandra Provost Viking "A" Unit

Where a person is required by or has the approval of the Oil and Gas Conservation Board to proceed with a scheme to inject any substance into an underground formation, he is permitted by section 186 of The Mines and Minerals Act, 1962, to proceed with the scheme without obtaining an agreement.

There were 71 schemes in which Crown mineral rights were involved. Twenty-two schemes authorized the injection of water for oil recovery enhancement; one scheme authorized the injection of water; natural gas liquids and dry gas for oil recovery enhancement; two schemes authorized the injection of gas for storage purposes; two schemes authorized the injection of gas for oil recovery enhancement; forty-one schemes authorized the return of salt water produced with petroleum and natural gas to subsurface formations; one experimental scheme authorized oil recovery enhancement; one scheme authorized enhanced recovery by cycling and one scheme authorized injection of natural gas liquids, propane and butane for storage purposes.

STAFF

At the close of the fiscal year the Division staff numbered 75, and they continued to perform their duties in an efficient manner.

During the year, Mr. Robert A. Seaton, Director of Minerals, and Mr. D. R. Jordan, Assistant Director of Minerals resigned after each serving the Department and Province with distinction for approximately twenty years.

Mr. M. J. Day was appointed to the position of Assistant Director of Minerals January 18, 1971. The position of Director was left vacant.

MINERAL TAX DIVISION

Report of the Superintendent

I. M. HARRINGTON

Producing area tax revenue for the fiscal year ending March 31, 1971, amounted to \$1,632,342.07, an increase of \$138,125.15 from the previous year's revenue of \$1,494,216.92. The rate of tax on the 1970 assessment was eight mills.

Mineral tax based on acreage for the fiscal year was received in the amount of \$932,678.73, an increase of \$3,970.74 from the \$928,707.99 received in the preceding year. The rate of tax was five cents an acre.

Four areas were added to the designated producing areas for the year 1970 and were assessed as unitized areas, with assessments being made in accordance with the tract factors listed in the Unit Agreements filed with the Department. These areas were Berry, Buck Lake, Rich and Westlock.

The following is a list of all designated producing areas showing the number of parcels assessed, minerals assessed and the assessed value.

Producing Area	Parcels Assessed	Principal Mineral	Assessed Value
Acheson	28	Petroleum and Natural Gas	\$ 5,728,999.79
Aerial	7	Petroleum and Natural Gas	48,726.09
Alderson	152	Petroleum and Natural Gas	525,180.16
Alexander	13	Natural Gas	69,690.57
Beaverhill Lake	119	Natural Gas	181,435.59
Bentley	32	Petroleum and Natural Gas	488,612.68
Berry	2	Natural Gas	3,886.38
Bindloss	4	Natural Gas	50,217.77
Bittern Lake	14	Natural Gas	239,883.38
Blackfoot	3	Petroleum	61,396.20
Bon Accord	36	Natural Gas	274,100.51
Bonnie Glen	23	Petroleum and Natural Gas	17,749,470.48
Buck Creek	3	Petroleum and Natural Gas	228,628.81
Buck Lake	5	Petroleum and Natural Gas	161,544.31
Buffalo Lake	3	Petroleum	482,772.56
Calgary	264	Petroleum and Natural Gas	7,004,309.63
Campbell	14	Petroleum and Natural Gas	144,583.55
Carstairs-Elkton	146	Petroleum and Natural Gas	6,330,886.80
Cessford	19	Petroleum and Natural Gas	595,489.50
Chauvin	6	Petroleum	397,495.94

Clive North	16	Petroleum and Natural Gas	\$ 427,363.81
Condor	2	Petroleum and Natural Gas	50,261.35
Crossfield	89	Natural Gas	3,049,608.61
Dorothy	9	Natural Gas	36,054.94
Duhamel	3	Petroleum	137,868.60
Equity	17	Natural Gas	79,215.87
Erskine	21	Petroleum and Natural Gas	1,005,976.23
Ferrier	7	Petroleum and Natural Gas	70,235.26
Fort Saskatchewan	116	Natural Gas	915,138.48
Garrington	65	Petroleum and Natural Gas	2,791,209.30
Ghost Pine	26	Natural Gas	205,175.34
Gilby	17	Petroleum and Natural Gas	1,156,096.22
Hackett	10	Natural Gas	62,222.89
Hamilton Lake	26	Petroleum	208,696.88
Harmattan-Elkton	74	Petroleum and Natural Gas	7,682,909.89
Homeglen-Rimbey	51	Petroleum and Natural Gas	2,819,085.51
Hussar	448	Petroleum and Natural Gas	6,992,570.30
Innisfail	19	Petroleum and Natural Gas	4,080,508.25
Joarcam	67	Petroleum	3,983,451.03
Joffre	99	Petroleum	3,330,981.14
Jumping Pound	84	Natural Gas	969,639.26
Jumping Pound West	42	Natural Gas	721,886.59
Kessler	30	Natural Gas	59,540.15
Lake McGregor	5	Natural Gas	56,452.63
Leafland South	7	Petroleum and Natural Gas	463,966.88
Leduc	128	Petroleum and Natural Gas	9,356,355.77
Lone Pine Creek	23	Natural Gas	569,379.39
Lookout Butte	6	Natural Gas	574,245.75
Medicine Hat-Roseglen	20	Natural Gas	78,049.35
Namac	10	Petroleum and Natural Gas	256,947.27
Nevis	118	Natural Gas	1,546,072.08
Okotoks	97	Natural Gas	938,946.95
Olds	87	Petroleum and Natural Gas	849,810.56
Oyen	2	Natural Gas	12,190.07
Paddle River	1	Natural Gas	5,415.62
Patricia	15	Natural Gas	96,321.37
Pembina	14	Petroleum and Natural Gas	1,039,428.27
Pembina East	24	Petroleum	2,639,124.35
Pincher Creek	21	Natural Gas	848,127.95
Provost	185	Petroleum and Natural Gas	535,078.53
Redland	89	Petroleum and Natural Gas	979,297.51
Redwater	17	Petroleum and Natural Gas	10,164,290.60
Rich	4	Natural Gas	36,525.62
Sarcee	1	Natural Gas	285,121.36

Seven Persons Creek	125	Natural Gas	\$ 60,412.96
South Sibbald	1	Natural Gas	2,911.40
Stettler	12	Petroleum and Natural Gas	1,334,759.69
Sundre	2	Petroleum and Natural Gas	48,728.98
Sunnynook	1	Natural Gas	2,115.10
Sylvan Lake	141	Petroleum and Natural Gas	3,779,349.46
Three Hills	1	Petroleum	2,364.94
Three Hills Creek	62	Natural Gas	199,067.93
Turner Valley	59	Petroleum and Natural Gas	2,757,599.78
Twining	5	Petroleum	108,427.12
Viking-Kinsella	414	Natural Gas	785,884.67
Vulcan	11	Natural Gas	125,460.43
Wainwright	34	Petroleum and Natural Gas	2,913,829.00
Wayne-Rosedale	12	Natural Gas	183,457.23
Westerose	5	Petroleum and Natural Gas	7,605,743.23
Westerose South	21	Natural Gas	4,170,687.24
Westlock	28	Natural Gas	238,803.55
Westward Ho	6	Petroleum and Natural Gas	914,430.17
Wildcat Hills	11	Natural Gas	948,177.96
Willesden Green	7	Petroleum and Natural Gas	467,253.54
Wimborne	47	Petroleum and Natural Gas	1,630,304.99
Wizard Lake	8	Petroleum and Natural Gas	14,687,350.43
Wood River	21	Natural Gas	88,847.71

In addition to the designated producing areas, there were 991 parcels assessed for a total assessed value of \$46,983,856.19 with the principal minerals assessed being petroleum, natural gas, coal and salt.

Under the heading of parcels assessed are the number of items appearing on the assessment roll with each parcel relating to the area contained in a certificate of title. In determining the assessed value of a parcel, each production spacing unit or unit tract is calculated separately; consequently, several calculations may be made in arriving at the assessment for a parcel.

There were 541 mineral tax certificates issued during the fiscal year with revenue derived therefrom being \$270.50. A tax certificate shows the amount of current taxes and arrears payable with respect to the mineral or minerals contained in a certificate of title. Anyone may obtain a certificate for a fee of fifty cents.

Pursuant to The Mineral Titles Redemption Act, after the mineral titles were acquired by the Crown, there were instances where the minerals had been granted under lease, licence, reservation, permit or other agreement, for exploration and development. The Statute provides that where the minerals have been granted by the Crown, the return of the title to the former owner must be delayed until the minerals are no longer under lease, licence, reservation, permit or

other agreement. In these instances, the former owner is entitled to receive the moneys collected by the Crown less a deduction of an amount equal to the tax that would have been charged had title been returned.

During the fiscal year the amount of moneys collected on existing agreements and returned to former owners was \$33,913.95. This brings the total to \$581,793.19 that has been returned to former owners since the Act came into force.

There was one title returned to the former owner as a result of an agreement terminating during the year, making a total of 1,185 titles returned since the inception of the Act. As at March 31, 1971, there were 25 titles, the redemption of which will be delayed until the leases or other agreements terminate.

PIPE LINE DIVISION

Report of the Superintendent of Pipe Lines

A. L. BERRY

During the fiscal year ending March 31, 1971, 430 new licences were issued covering the operation of 3,650 miles of pipe line.

Gulf Oil Canada Limited during the summer of 1970 constructed a 193-mile 10-inch diameter products pipe line from Edmonton to Calgary to tie in with the expansion of Gulf's Edmonton refinery to 80,000 barrels per day. Products to be carried will be gasolines, diesel fuel, aviation fuels, solvents and heating oil.

Pembina Pipe Line Ltd. completed a 26-mile 16-inch diameter loop to increase crude oil capacity from the Pembina field to Edmonton to 185,000 barrels per day.

The Alberta Gas Trunk Line Company Limited completed 125 miles of 42-inch diameter line looping portions of the company's existing system. This is the largest diameter pipe yet laid in Canada on any oil or gas pipe line.

Imperial Oil Limited is planning a 103-mile loop of 8-inch diameter pipe paralleling its existing condensate line from Judy Creek to Golden Spike to provide additional capacity by the fall of 1971.

Our Division has had representation on the Canadian Standards Association Committee which was established in 1965 to develop standards for plastic piping systems for gas service. Following recommendations of the Committee, C.S.A. issued early in 1971 Standard B137.4-1971 Thermoplastic Piping Systems for Gas Service and also Special Publication B137.14-1971 Recommended Practice for the Installation of Thermoplastic Piping for Gas Service. The development of these Standards has contributed to the increasing acceptance of plastic pipe for rural natural gas distribution systems.

The Pipe Line Division staff remains unchanged at a total of 19 employees.

The following table shows the mileage and licence statistics related to the various classifications of pipe lines for the year ending March 31, 1971.

SUMMARY OF PIPE LINE LICENCES

	Licensed at March 31, 1970		Licensed During the Year		Cancelled During the Year		Licensed at March 31, 1971	
	Number of Licences	Mileage of Pipe Line	Number of Licences	Mileage of Pipe Line	Number Cancelled	Mileage Cancelled	Number of Licences	Mileage of Pipe Line
Oil Lines	170	4,685.64	27	492.02	—	10.30	197	5,167.36
Gas Lines	648	6,877.60	47	665.66	1	.25	694	7,543.01
Secondary Lines for Oil ..	2,005	3,587.18	55	224.21	—	7.68	2,060	3,803.71
Secondary Lines for Gas ..	1,444	5,997.09	108	772.05	6	22.98	1,546	6,746.16
Secondary Lines for Water and Other Substances ..	940	2,625.61	61	378.16	—	30.13	1,001	2,973.64
Distribution Lines	1,431	3,628.64	132	1,118.33	—	1.49	1,563	4,745.48
Private Lines	322	43.39	—	—	—	—	322	43.39
Mineral Lines	2	1.87	—	—	—	—	2	1.87
	6,962	27,447.02	430	3,650.43	7	72.83	7,385	31,024.62

TECHNICAL DIVISION

Report of the Superintendent of the Technical Division

J. M. NOVAK

The following report summarizes the operations of the Technical Division for the fiscal year ending March 31, 1971.

DRAUGHTING, LAND DESCRIPTIONS AND GENERAL

The series of maps covering approximately forty-eight townships for each area and on a scale of three-quarters of an inch to the mile, showing the status of oil and gas wells and field boundaries, were drawn covering the following areas:

BLAIRMORE — Townships 7 to 13, Ranges 1 to 6, West of the 5th Meridian.

BONNYVILLE — Townships 61 to 68, Ranges 6 to 10, West of the 4th Meridian.

GRANDE CACHE WEST — Townships 53 to 60, Ranges 9 to 14, West of the 6th Meridian.

HANNA — Townships 29 to 36, Ranges 12 to 16, West of the 4th Meridian.

HINTON — Townships 45 to 52, Ranges 24 to 28, West of the 5th Meridian, and Ranges 1 and 2, West of the 6th Meridian.

JACKPINE RIVER — Townships 48 to 52, Ranges 9 to 14, West of the 6th Meridian.

MOOSE LAKE — Townships 101 to 108, Ranges 1 to 6, West of the 5th Meridian.

WENTZEL RIVER — Townships 109 to 117, Ranges 1 to 5, West of the 5th Meridian.

YOUNGSTOWN — Townships 29 to 36, Ranges 7 to 11, West of the 4th Meridian.

Maps in the same series were redrawn and now cover the following areas:

BINDLOSS — Townships 22 to 28, Ranges 1 to 7, West of the 4th Meridian.

MEDICINE HAT NORTH — Townships 15 to 21, Ranges 1 to 7, West of the 4th Meridian.

PINCHER CREEK — Townships 1 to 6, Ranges 26 to 30, West of the 4th Meridian, and Ranges 1 to 5, West of the 5th Meridian.

SEDALIA — Townships 29 to 36, Ranges 1 to 6, West of the 4th Meridian.

Two maps in the Coal series, on a scale of one inch to two miles, showing leases, exploration reservations and freehold were drawn covering the following areas:

EDSON — Townships 53 to 61, Ranges 16 to 28, West of the 5th Meridian.

GRANDE PRAIRIE — Townships 62 to 72, Ranges 1 to 14, West of the 6th Meridian.

All maps are subject to revision as changes and additions occur.

No new maps in the pipe line series were prepared. However, considerable additional information was added to existing maps due to the extension of transmission, gathering and distribution systems.

A total of 7,586 maps were distributed by the Department. A list of maps is available indicating the area covered and the price of each map.

During the year, 1,871 licences were issued by the Oil and Gas Conservation Board for wells to be drilled for the purpose of obtaining oil or gas, an increase of 55 from the 1,816 licences issued the previous year. The Division searches the ownership of Crown minerals in the spacing unit allocated to the well.

Land descriptions were prepared for all mineral dispositions, as well as descriptions for recommendations to Council.

The photo-reproduction requirements of this Department were processed by the Surveys Branch, Department of Highways and Transport. This Division supplies the ozalid print requirements of the Department.

The Records Branch maintains the records in the Department respecting leases, permits, reservations, licences and other agreements and certificates of record. It also provides township plots to the public indicating availability or status of Crown minerals.

During the year 2,088 transfers were registered relating to 6,885 agreements and certificates of record. A comparison with the previous year follows:

	1969-70	1970-71
Petroleum and Natural Gas Leases	7,298	6,214
Petroleum Leases	1	1
Natural Gas Leases	143	115
Petroleum and Natural Gas Permits	50	42
Petroleum and Natural Gas Reservations	231	167
Crown Reserve Drilling Reservations	63	20
Natural Gas Licences	3	0
Crown Reserve Natural Gas Licences	2	6
Coal Leases	39	32
Road Allowance Coal Leases	6	0
Oil Sands Leases	20	20
Bituminous Sands Leases	28	12
Quarrying Leases	2	1
Certificates of Record	48	17
Quartz Mineral Exploration Permits	11	14
Geophysical Licences	3	6
Geophysical Permits	6	7
Sulphur Prospecting Permits	1	0
Pipe Line Permits	6	11
Pipe Line Licences	118	194
Provisional Pipe Line Licences	2	6
TOTALS	8,081	6,885

The documents filed in comparison with the previous year were:

Type of Document	1969-70	1970-71
Mechanics Lien	17	4
Lis Pendens	1	0
Discharge of Mechanics Lien	16	13
Bank Securities	243	345
Discharge of Bank Securities	101	246
Hypothecation of Pipe Line	1	1
Discharge of Hypothecation	0	1
TOTALS	379	610

The 610 documents filed relate to 798 agreements.

Three transfers were issued during the fiscal year, one to complete an exchange of minerals and two for the return of minerals underlying roadways to the owners of the adjacent minerals.

ACCOUNTS

Report of the Accountant

B. P. P. MUIR

A surplus of \$233,415,715.41 on Income Account was shown for the Fiscal Year ending March 31, 1971.

Net Revenue on Income Account amounted to \$235,575,231.96.

Gross Receipts from all sources amounted to \$242,455,043.39.

Expenditures on Income Account for the year amounted to \$2,159,516.55. Particulars of expenditure may be found in Statement "C".

As at March 31, 1971 there were 45,024 Accounts Receivable as compared with 45,327 as at March 31, 1970.

During the year there were 5,237 accounts cancelled or closed and 4,934 opened.

INDEX TO STATEMENTS

A — Statement of Receipts from all sources.

B — Statement of Receipts—Income Account

C — Statement of Expenditure by Appropriation and Character

D — Statement of Net Receipts by Divisions

E — Statement of Receipts and Expenditure

F — Statement of Fiscal Revenue for the last five years and Total Revenue for the period April 1, 1949 to March 31, 1971.

Statement "A"

STATEMENT OF RECEIPTS FROM ALL SOURCES

From April 1st, 1970 to March 31st, 1971

	Gross Receipts	Refunds	Net Receipts
Income Account (See Statement "B")	\$236,189,994.43	\$ 614,762.47	\$235,575,231.96
Transferred Collections	344.95	—	344.95
Suspense (Unapplied receipts carried forward subject to refund	6,264,704.01	6,131,861.13	132,842.88
	<u>\$242,455,043.39</u>	<u>\$ 6,746,623.60</u>	<u>\$232,708,419.79</u>

Statement "B"

STATEMENT OF RECEIPTS — INCOME ACCOUNT

From April 1st, 1970 to March 31st, 1971

	Gross Receipts	Refunds	Net Receipts
COAL MINING			
Coal Fees, Rentals, etc.	\$ 1,257,400.68	\$ 283.00	\$ 1,257,117.68
Coal Royalty	383,767.45		383,767.45
Coal Mines Act Sundry Revenue	3,390.30	98.00	3,292.30
PETROLEUM AND NATURAL GAS			
Petroleum and Natural Gas Fees, Rentals, etc.	58,863,253.27	586,442.92	58,276,810.35
Petroleum and Natural Gas Royalty	143,734,641.81	16,585.87	143,718,055.94
Crown Reserve Sales	26,537,046.31		26,537,046.31
MISCELLANEOUS			
Oil Sands Fees, Rentals and Royalty	2,445,855.63	4.00	2,445,851.63
Quarrying Fees, Rentals and Royalty	79,848.91	50.00	79,798.91
Miscellaneous Mining	179,036.93	9,556.06	169,480.87
MINERAL TAX	2,566,268.42	977.12	2,565,291.30
PIPE LINE ACT SUNDRY REVENUE	15,949.00	45.00	15,904.00
ADMINISTRATION SUNDRY REVENUE	119,457.73	720.50	118,737.23
LANDMAN LICENCE FEES	2,840.00		2,840.00
REIMBURSEMENT OF SALARIES AND EXPENDITURES	1,237.99		1,237.99
TOTAL—INCOME ACCOUNT (Carried to Statement "A")	<u>\$236,189,994.43</u>	<u>\$ 614,762.47</u>	<u>\$235,575,231.96</u>

Statement "C"

EXPENDITURE CLASSIFIED BY APPROPRIATION AND CHARACTER
FOR THE FISCAL YEAR ENDED MARCH 31, 1971

INCOME ACCOUNT

SERVICE	2001 Minister's Office	2002 General Administration	2004 Pipe Line Division	2005 Geological Division	2006 Mines Division	2007 Minerals Division	2008 Mineral Tax Division	2010 Technical Division	2011 Abandonment of Mining Properties	2012 Redemption of Mineral Titles	2013 Clay and Marl Crown Lease Act	2014 Right of Entry Arbitration Board	2015 Supervisory and Safety Training Program	2016 Surface Reclamation	TOTAL
Advertising						9,088.76								598.00	9,088.76
Compensation														63.00	598.00
Contracts and Agreements				6,688.00					95,241.87						101,992.87
Entertainment Expenses		15.40													15.40
Fees and Commissions		1,122.42	35.00		840.00	48.65		327.50				180.00			2,553.57
Freight, Express and Cartage		421.00										419.22			840.22
Furnishings, Equipment and Tools		802.51	718.71		179.80	3,917.00	397.00	471.22				860.36		995.55	8,342.15
Grants, Prizes													3,600.00		3,600.00
Insurance Premiums		.95	62.69		23.75							7.44			94.83
Materials, Supplies, Administrative and Construction	485.86	18,966.93	2,123.56		1,899.14	1,847.14	1,253.42	21,424.68				2,810.13		523.51	51,334.37
Postage	150.00	2,400.58	700.00		550.00	10,536.98	2,300.00	600.00				1,200.00		900.00	19,337.56
Rentals	66.16							12,352.54				10.00		430.00	12,858.70
Refunds and Remissions										33,913.95	4,843.06				38,757.01
Repair and Maintenance of Office Machines and Equipment	142.81	2,026.27	333.68		226.41	1,634.03	568.13	2,029.29				326.29		71.88	7,358.79
Salaries	22,464.00	238,573.46	186,726.76		86,123.50	440,283.09	134,776.14	368,573.83				111,005.08		148,837.33	1,737,363.19
Telephone and Telegraph	1,737.63	2,150.01	5,014.55		368.64	6,068.50	42.62	4,983.12				829.28			24,720.62
Travelling Expenses of Other Than Public Servants		365.80			241.07									16,808.39	17,415.26
Travelling Expenses of Public Servants	1,352.00	8,103.58	39,570.06		8,751.61	968.34	2,875.86	2,174.74				10,232.47		46,914.57	120,943.23
Tuition		119.00				225.00	45.00	235.00						90.00	714.00
Wages		274.80					229.77	1,083.45							1,588.02
TOTAL: Income Account	26,398.46	275,342.71	235,285.01	6,688.00	99,203.92	474,617.49	142,487.94	414,255.37	95,241.87	33,913.95	4,843.06	127,880.27	3,600.00	219,758.50	2,159,516.55

Statement "D"

STATEMENT OF NET RECEIPTS BY DIVISIONS

For Fiscal Year Ending March 31st, 1971

INCOME ACCOUNT:

Minerals Division	\$232,867,929.14
Mineral Tax Division	2,565,291.30
Mines Division	3,292.30
Pipe Line Division	15,904.00
Miscellaneous (Administration Sundry Revenue, etc.)	122,815.22
TRANSFERRED TO OTHER DEPARTMENTS	344.95
SUSPENSE (unapplied receipts carried forward, subject to refund)	132,842.88
	<u>\$235,708,419.79</u>

Statement "E"

STATEMENT OF RECEIPTS AND EXPENDITURE

For Fiscal Year Ending March 31st, 1971

Gross Receipts	\$242,455,043.39
Refunds	6,746,623.60
Net Receipts	235,708,419.79
Net Revenue on Income Account	235,575,231.96
Total Expenditure from Appropriations	2,159,516.55
Surplus on Income Account	233,415,715.41

Statement "F"

STATEMENT OF FISCAL REVENUE FOR THE LAST FIVE YEARS

AND

TOTAL REVENUE FOR THE PERIOD APRIL 1, 1949 TO MARCH 31, 1971

	Total Revenue April 1, 1949 to March 31, 1966	1966-67	1967-68	1968-69	1969-70	1970-71	Total Revenue April 1, 1949 to March 31, 1971
COAL							
Fees, Rental and Bonus	\$ 1,642,827.71	\$ 83,540.35	\$ 189,365.87	\$ 444,322.05	\$ 511,340.11	\$ 1,257,117.68	\$ 4,128,513.77
Royalty	4,065,312.43	215,539.09	232,363.54	188,318.02	140,848.41	383,767.45	5,236,548.94
Sundry Revenue	55,986.17	2,362.44	1,615.80	1,352.00	2,721.00	3,292.30	67,269.71
PETROLEUM AND NATURAL GAS							
Fees, Rental and Bonus	482,559,968.99	52,240,050.51	53,824,878.34	55,529,455.95	60,933,768.89	58,276,810.35	763,454,933.03
Royalty	529,235,595.98	80,214,493.81	80,071,940.39	105,122,832.49	121,098,447.10	143,718,055.94	1,073,482,425.71
Crown Reserve Sales	905,769,898.81	106,225,023.84	68,726,531.37	121,031,177.72	70,294,355.77	26,537,046.31	1,299,584,053.82
SALT							
Fees and Rental	18,787.00	1,005.60	1,005.60	1,010.60	1,012.55	1,004.49	23,825.84
Royalty	173,232.18	18,656.77	20,461.70	20,466.67	20,784.73	20,828.34	274,470.39
QUARRYING							
Fees and Rental	4,617.71	31.00	21.00	20.00	100.00	50.00	4,839.71
Royalty	847,907.11	83,921.36	79,900.35	80,724.58	81,564.32	79,748.91	1,253,766.63
QUARTZ							
Fees, Rental and Bonus	59,572.76	50.00	38,115.00	92,439.19	140,812.36	20,741.00	351,730.31
OIL SANDS							
Fees, Rental and Royalty	7,107,013.50	870,630.51	1,002,342.59	2,311,872.60	3,133,772.10	2,445,851.63	16,871,482.93
MINING MISCELLANEOUS							
Fees, Rental and Royalty	2,868,227.53	178,527.84	190,915.47	123,589.91	65,028.21	126,907.04	3,553,196.00
MINERAL TAXATION ACT							
Non-Producing Area Tax	6,046,115.27	572,658.15	552,929.75	892,070.09	928,707.99	932,678.73	9,929,359.98
Producing Area Tax	16,373,794.33	1,282,079.41	1,326,667.49	1,459,176.16	1,494,216.32	1,632,342.07	23,578,275.38
Certificate Fees	15,007.60	237.50	237.50	128.00	99.50	270.50	15,951.10
PIPE LINE ACT SUNDRY REVENUE							
.....	71,577.65	12,165.00	12,111.50	12,528.50	12,673.70	15,904.00	136,960.35
ADMINISTRATION SUNDRY REVENUE							
.....	1,128,060.84	55,549.13	80,351.73	75,978.46	121,778.43	119,975.22	1,581,693.81
LANDMAN LICENCE FEES							
.....				11,855.00	2,585.00	2,840.00	17,280.00
TOTAL	\$1,958,164,503.57	\$ 242,067,030.81	\$ 221,351,794.99	\$ 287,409,398.99	\$ 258,964,617.09	\$ 235,575,231.96	\$3,203,552,577.41

PERSONNEL

Report of the Personnel Officer

T. H. GLADDERS

At the commencement of the year there were 268 established department positions and 247 were occupied. At the end of the year there were 271 established department positions and 251 positions were occupied, for a net increase during the year of three positions and four employees.

During the year, 48 employees left the department and of these six left the city; eleven resigned to accept employment outside of the Public Service; seven transferred to other departments; nine left to further their education; nine married female employees left the employment force; one retired; one died and four left for various other reasons.

During the year, department personnel participated in the Personnel Administration Office In-service Staff Development Program as follows:

Executive Development — One staff member attended a senior Management Conference conducted at the Banff School of Fine Arts and six staff members attended Middle Management Conferences conducted at either the Hinton Forestry School or at the Olds School of Agriculture.

Supervisory Development — Five staff members attended Introduction to Supervision courses. Nine staff members attended Supervisory Development courses. Thirty-four staff members attended a total of thirty-nine one-day Seminar Workshops as follows:

Motivation	7
Discipline	10
Performance Appraisal	7
Personnel Practices	5
Communications	10
TOTAL	39

Under the Staff Development Regulations, fifteen staff members attended various Program Certificate Courses, Accounting Courses or Seminars with financial assistance from the department during the year.

